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about two thirds of the length of the lower jaw backwards from the symphysis, being a longitudinal slit a little within the lower edge of the basis of the jaw, and through it exudes an unctuous substance of the consistence of suet and the smell of musk. During warm weather, when the animal feeds freely, the secretion is copious; but in winter is much diminished in quantity, and less powerful in scent.

The gland, on removing the integuments, is seen lying between the skin and under-surface of the tongue. It consists of a simple follicle or sac, of a blueish colour, and an elongated and pyriform shape. In an alligator four feet in length, it is about half an inch long and one sixth in diameter. It is lined with a soft secreting membrane.

The gland is enveloped by extremely fine, delicate, muscular fibres, disposed obliquely, and consisting of two fasciculi, passing respectively over and under the gland, and uniting at its base into a long slender round muscle, which, after making a slight curve forwards, proceeds directly back to the corner of the os hyoides, to which it is closely united; and following the course of another muscle apparently identical with the mylo-hyoideus in mammifera. The use of the muscle seems to be to bring the gland into a proper position for discharging its contents, and to operate such discharge by its pressure.

The author, taking into consideration the situation of the gland near the mouth of the alligator, its predatory habits and voracity of fish, and the well-known partiality of fish for odoriferous oils and extracts, conceives that the use of this secretion is to act as a bait, and attract the fish to such a position that he can easily seize on them, in his usual way of seizing his prey, by snapping sideways at them.

On the Permeability of Transparent Screens of extreme Tenuity by radiant Heat. By William Ritchie, A.M. Rector of Tuin Academy. Communicated by J. F. W. Herschel, Esq. Sec. R.S. Read March 8, 1827. [*Phil. Trans.* 1827, p. 139.]

The author states in this paper, that invisible radiant heat, from sources at elevated temperatures, freely permeates thin transparent screens in the same manner as light; but that as this doctrine, established by Professor Prévost and M. de la Roche has been controverted, he thinks it necessary to demonstrate it by fresh experiments: to this end he covered a small aperture with a film of glass almost iridescent, and keeping it constantly cold, by blowing on it, below the temperature of ambient air, he found that an air-thermometer on one side of it was not affected by a heated iron ball on the other, if the temperature of the ball was low; but that as this temperature was raised, though not to the point of visible ignition, the effect on the thermometer became sensible and even considerable.

In another experiment, two air-thermometers, having their bulbs transparent, and as thin as possible, were placed equidistant from a heated ball just ceasing to be visible in the dark. The one was clear,

the other *coated inside* with a thin film of pounded charcoal. The latter was most affected.

In a third experiment, a frame of glass threads, or fine wire, placed vertically, was coated with a film of diluted white of egg, applied with a broad hair brush, and kept constantly at the same temperature by applying it fresh and fresh. Then, exposing a heated ball on one side, and an air-thermometer on the other, no effect was sensible on the latter, when the temperature of the ball was low, but when just invisible in the dark the effect was very sensible.

The author also finds that this effect is greater than in the case of glass, and that liquid screens are more permeable to heat than solid ones. He also found that little difference of effect is observed whether the screens be near to or far from the heated ball, *ceteris paribus*; and this he considers as demonstrating that the effect was not due to secondary radiation from the screen.

On the Derangements of certain Transit Instruments by the effects of Temperature. By Robert Woodhouse, A.M. F.R.S. &c. Read April 26, 1827. [*Phil. Trans.* 1827, p. 144.]

In the Philosophical Transactions for 1825, the author alluded to the derangement of the Cambridge transit instrument, arising from unequal expansion of its braces, establishing, as he conceived, the fact and cause of such derangement; and in a subsequent paper instanced its effect in one case as altering, by no less than 20'', the time of the passage of the pole star over the wires. In consequence the removal of the braces was resolved on, but from one cause or other delayed; but the author considers good to have arisen from this procrastination, as enabling him to make further experiments, which he was led to do in consequence of Mr. South's observations, which lead to conclusions opposite to those deduced by himself. To satisfy his own mind, therefore, he instituted the series of experiments described in this paper.

His first care was to determine precisely, by a series of transits, the polar intervals between the wires of his eye-piece. He then observed the pole star at its lower culmination, and after its passage over the middle wire, applied a warm blanket to the upper eastern and lower western brace, and found that a deviation of the telescope to the west had taken place, such as to alter the passage over the remaining wires nearly 19 seconds, and in the direction corresponding to the expansion of the braces. Another observation, under more favourable circumstances, gave a similar result; viz. 18 seconds of retardation.

In another experiment the warm blankets were applied to the upper western and lower eastern braces, when deviations appeared to have taken place to the extent of 36, 29, and 27 seconds in the respective passages over the 5th, 6th, and 7th wires.

In another trial the passages over the three first wires were ob-